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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/571,057

03/07/2006

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EXAMINER

HANNON, THOMAS R

ART UNIT

PAPER NUMBER

3682

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/571,057	Applicant(s) OHTSUKI ET AL.	
	Examiner Thomas R. Hannon	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/7/06 1/11/07 4/27/07 9/6/07</u> . | 6) <input type="checkbox"/> Other: ____. |

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Figures 11-14 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. US 6,280,096 in view of: Murden US 2,126,912, Brawley US 4,060,290, Sawai et al US 5,577,323, and Yasuda et al US 5,261,159, individually.

With respect to claims 1 and 4, Miyazaki discloses a wheel support bearing assembly for rotatably supporting an automotive wheel relative to a vehicle body structure, which assembly comprises an outer member (4) having an outer periphery formed with a flange (17) and also having an inner periphery formed with raceway surfaces (15, 16); an inner member (2, 3) formed with raceway surfaces (7, 9) confronting the associated raceway surfaces in the outer member; double rows of rolling elements (5) interposed between the raceway surfaces in the inner member and the raceway surfaces in the outer member, respectively; and a sealing unit (28, 29) for sealing opposite open ends of an annular bearing space delimited between the outer and inner

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members; wherein the inner member includes a hub axle (2) formed with one of the raceway surfaces and a wheel mounting flange (6); the other of the raceway surfaces of the inner member is formed on an inner race segment (3) that is mounted on an outer periphery of one end of the hub axle. With respect to claims 2 and 5, Miyazaki discloses a wheel support bearing assembly for rotatably supporting an automotive wheel relative to a vehicle body structure (Figures 9 and 10), which assembly comprises an outer member (4) having an inner periphery formed with raceway surfaces (15, 16); an inner member (2) formed with raceway surfaces (7, 9) confronting the associated raceway surfaces in the outer member; dual rows of rolling elements (5) interposed between the raceway surfaces in the inner member and the raceway surfaces in the outer member, respectively; and a sealing unit (28, and unnumbered seal on right side of figures) for sealing opposite open ends of an annular bearing space delimited between the outer and inner members; wherein the inner member includes a hub axle (2) formed with one of the raceway surfaces (7) and a wheel mounting flange (6); the other of the raceway surfaces of the inner member is formed on an inner race segment (3) that is mounted on an outer periphery of one end of the hub axle. With respect to claims 3 and 6, Miyazaki discloses a wheel support bearing assembly for rotatably supporting a wheel relative to a vehicle body structure (figures 14-16), which assembly comprises an outer member (4) having an outer periphery formed with a flange (17) and also having an inner periphery formed with raceway surfaces (15, 16); an inner member (2) formed with raceway surfaces (7, 9) confronting the associated raceway surfaces in the outer member; dual rows of rolling elements (5) interposed between the raceway surfaces in the inner member and the raceway surfaces in the outer member; and a sealing unit (28, 29) for sealing opposite open ends of an annular bearing space delimited between the outer and inner members;

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the inner member includes two inner races (41, 3) having a respective raceway surfaces confronting the raceway surfaces provided in the outer member.

Murden, Brawley, Sawai et al., and Yasuda et al. each disclose bearing races in which the angle of fiber flow relative to each of the raceway surfaces parallel i.e., is chosen to be smaller than 15°. It would have been obvious to one of ordinary skill in the art at the time the invention was made to minimize the angle of the fiber flow relative to the raceway surfaces of Miyazaki for the desired purpose of improving the bearing life as taught and suggested by each of Murden, Brawley, Sawai et al., and Yasuda et al.

With respect to claims 7 and 8, Miyazaki discloses the hub axle being made of bearing steel having a carbon content within the range claimed.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. US 6,280,096 in view of: Murden US 2,126,912, Brawley US 4060290, Sawai et al US 5,577,323, and Yasuda et al US 5,261,159, individually as applied to claims 1 and 3 above, and further in view of Takemura et al. JP 2003-097569. Takemura discloses a wheel bearing in which the outer member is made of bearing steel having a carbon content within the range claimed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the outer member of Miyazaki of known bearing metals, including that taught and suggested by Takemura.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Hannon whose telephone number is (571) 272-7104. The examiner can normally be reached on Monday-Thursday (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas R. Hannon/
Primary Examiner, Art Unit 3682